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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,467	12/08/2005	Alexander Mark Heming	70193	3579
85981 7590 10/22/2009 Syngenta Corp Protection, Inc. 410 Swing Road Greensboro, NC 27409				
EXAMINER				
KAUCHER, MARK S				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
10/22/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/537,467

Applicant(s)

HEMING ET AL.

Examiner

MARK S. KAUCHER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08/19/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 22-42 is/are pending in the application.
- 4a) Of the above claim(s) 1, 33 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-32 and 35-42 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) 1 and 22-42 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/03/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

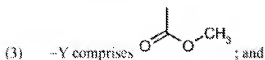
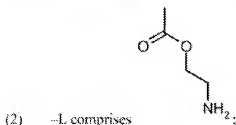
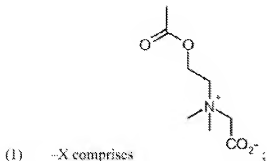
Election/Restrictions

1. Applicant's election with traverse of group II (claims 22-42) in the reply filed on 08/10/09 is acknowledged. The traversal is on the ground(s) that the search is not unduly search burdensome. This is not found persuasive because a search burden is not a requirement for election/restriction requirements under US U.S.C. 372. Specifically, in accordance with § 1.499 Unity of invention during the national stage. See paragraph 1 of the election/restriction requirement mailed 06/17/09.

It is noted that lack of unity analysis is based only on the presence or absence of a special technical feature. See 1850 (I) for more information.

The requirement is still deemed proper and is therefore made FINAL.

2. Applicant's election of:



(4) the one or more substances comprises a tolylene diisocyanate.

in the reply filed on

08/10/09 is acknowledged. It is noted that the election requirement is beyond the scope of the original election/restriction requirement mailed 06/17/09. Specifically, the election requirement was only required for group I. See paragraph 3 of the election/restriction requirement mailed 06/17/09. More specifically, it is noted that applicants, in the response, elected group II and added the species of group I into the new claims of group II. However, upon further consideration, the election will be admitted. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claim 1 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 08/10/09.
4. Claims 33 and 34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Specifically, claims 33 and 34 limit X to "a group -CO-Z' where Z' is a methoxy-(polyethylene glycol) having a degree of polymerisation of 5-100". However, it is noted that applicants have already elected the betaine (see X in paragraph 2 above), which is not the same as the X disclosed in claims 33 and 34.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.

- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

5. The disclosure is objected to because of the following informalities:

- Page 23, line 30 contains the word "hydrochloride", which appears to be a misspelling of hydrochloride".

Appropriate correction is required.

Claim Objections

6. Claim 36 contains the limitation "g:f is from 1:2 to 1:10", which appears to be a typo. The examples and originally filed specification indicate that the ratio is inverted. Specifically, the ratio should be "f:g is from 1:2 to 1:10". See examples, and specifically see page 21, lines 16-19, which states: "**two to ten** units of hydrophobic monomers [**g** units] to **one** cross-linking [**f**] units (i.e. the ratio of **g** to **f** is preferably from **1:2 to 1:20**, for example from 1:2 to 1:10)". The cited phrase states that the ratio is g:f of 2:1 to 10:1 (or f:g of 1:2 to 1:10) followed by states "that is" g:f of 1:2 to 1:10. The statement is inconsistent and appears to be a typo in the second range as evidenced by the examples.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. As to claims 35-38, claim 35 (note claims 36-38 depend on claim 35) recites the limitation "said hydrophilic block comprising said residue having formula (II), a hydrophilic unit (-CH₂CR¹X-), or both", which renders the claim indefinite. Both what? It is not clear what is meant by both? Therefore, what does the hydrophilic block comprises? the phrase "said hydrophilic block comprising said residue having formula (II), a hydrophilic unit (-CH₂CR¹X-)" already requires both the hydrophilic unit and formula (II) to be in the hydrophilic block. Does the "or both" convey that the hydrophilic block may comprise at least one of formula (II) and the hydrophilic unit?

10. Claim 36 is also indefinite because it contains the limitation "f:g to 1:2 to 1:10", which broadens the parent claim. Parent claim 25, which claim 36 depends upon, limits f to 0.05 to 0.4 and g to 0.1 to 0.9. Therefore, how can the f:g ratio be, for example, 1:10 if the lowest endpoint of g can be is 0.1 and the highest endpoint f can be is 0.4. Therefore the dependent claim (36) is attempting to broaden the parent claim (25).

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

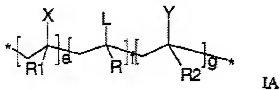
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 22-32 and 35-42 are rejected under 35 U.S.C. 102(e) as being anticipated by US 7,199,185 (herein "Heming").

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

13. As to claims 22-23 and 39-40, Heming discloses a particulate suspension comprising (see abstract, col. 1, line 16 through col.2, line 24 and examples):

- A suspended solid (agrochemical). See col. 2, lines 6-24, claim 11 and examples.
 - (i) A polymer comprising a hydrophilic and hydrophobic moiety that contains functional groups capable of undergoing crosslinking reaction. See abstract and col. 6, lines 3-25, col. 15, lines 4-18 and examples.
 - (ii) Tolyene diisocyanate (TDI). See page 4, third paragraph, col. 15, lines 4-18, col. 23, lines 1-44 and examples.
 - The ratio of polymer to suspended solid is less than 1 part polymeric stabilizer per 5 parts of suspended solid per weight. See examples. Specifically, see example 7, which discloses "aqueous emulsion at pH above 7 at a 50% internal phase volume was prepared from s-metolachlor mixed with 2% CX-300, using the polymeric surfactant of Example 2f at 1% w/w to the oil phase." It is noted that s-metolachlor is an agrochemical.
14. As to claim 24, the particle sizes are generally about 5 microns. See examples and table 2.
15. As to claims 25-32 and 41-42, Heming discloses that the polymeric stabilizer (also see examples) is preferably:



(col. 7, lines 33-50)

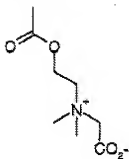
the value of e is from
0.005 to 0.35; the value of f is from 0.05 to 0.4 and the value of g is from 0.10 to 0.90

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(col. 7, lines 33-50)

It is especially preferred that the unit e is derived from one or more of the following monomers:-

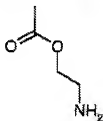
DMMAEA betaine*: 2-(N,N-Dimethyl-N-(2-methacryloxyethyl) ammonium)ethanoic acid, wherein R1 is methyl and -X has the formula



(col. 9, lines 3-19)

It is preferred that the unit f is derived from one or more of the following monomers:

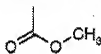
AEMA: 2-Aminoethyl methacrylate wherein R is methyl and L is the group



(col. 10, lines 54-67)

It is preferred that the unit g is derived from one or more of the following monomers:

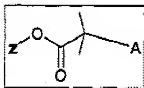
methyl methacrylate wherein R is methyl and Y is the group:



(col. 11, lines 59-67).

It is noted that the * is formed from:

the polymer will start with a hydrophilic group designated "Hydrophile" in Figure I. A typical hydrophilic initiator has the formula II



II

wherein A is a group such as bromine that under certain conditions, such as in the presence of a transition metal complex, may be activated such that vinylic monomer units are inserted into the carbon-A bond and Z is a methoxy-polyethylene glycol group.

(col. 8, lines 4-21).

16. As to claim 35, Heming states:

Preferred block copolymers for use in the present invention are comprised of a hydrophilic A block, which in turn is comprised of a hydrophile and/or hydrophilic monomer(s) ($-\text{CH}_2\text{CR}^1\text{X}-$), that is adjoined to a hydrophobic B block which is comprised of randomly copolymerised hydrophobic monomer(s) ($-\text{CH}_2\text{CR}^2\text{Y}-$) and cross-linking units ($-\text{CH}_2\text{CH}_2\text{CRL}-$).

See col. 14, lines 20 through 38.

17. As to claim 36, Heming discloses several embodiments (examples) wherein the range is between 0.2 and 1.0 and the ratio is 1:2 to 1:10. For example, see examples 4a-4d. Also see col. 1, line 16 through col. 2, line 24.

18. As to claims 37-38, as discussed above, the functional group is an amino and the crosslinking agent is TDI. See examples.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. Claims 22-32 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,262,152 (herein "Fryd").

22. As to claim 22-23 and 39-40, Fryd discloses a suspension (see abstract, col. 1, lines 10 through col. 2, line 60 and examples) comprising:

- A liquid phase having suspended a substantially insoluble solid phase. The particles may comprise agrichemicals (insecticides). See col. 3, lines 28-35.
 - (i) A polymeric stabiliser comprising hydrophilic and hydrophobic moieties and further comprising a functional group (e.g. an amine that is crosslinked with an isocyanate, see table 1). See abstract and examples.

(ii) An isocyanate in the liquid phase. See abstract, examples, table 1 and col. 1, lines 10 through col. 2, line 60. Note the diisocyanates listed in col. 6, lines 10-14.

- It is noted that Fryd is silent on disclosing the a ratio of less than 1:5 polymer to solid. However, Fryd generally embraces greater amounts of solid than polymer. Also see example 2.

Furthermore, Fryd discloses that the amount is dependent on the application (e.g. inks, agricultural compounds or cosmetics). See col. 3, lines 7-35. Therefore, it is the examiner's position that the ratio of polymer to solid is a result effective variable because changing them will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriate ratio of polymer to solid, including those within the scope of the present claims, so as to produce desired end results.

23. As to claim 24, Fryd discloses that a useful particle size is from 0.005 to 15 microns. Fryd also discloses that the particle size is a function of the application used. Therefore, it would have been obvious to optimize the particle size. See col. 3, lines 8-20.

24. As to claims 25-26, 28-32 and 41, Fryd discloses that the polymer may comprise hydrophilic, hydrophobic and crosslinker groups. See abstract and examples.

Specifically, hydrophobic monomers such as methyl methacrylate (see col. 4, lines 44-59 and examples), hydrophilic monomers (such as PEGMA or methacrylic acid, see col. 4, line 60 through col. 5, line 10 and examples), and crosslinkable monomers such as hydroxy ethyl methacrylate (note that hydroxy and amino are interchangeable function groups) and/or amino ethyl methacrylate (see col. 5, line 38 through col. 6, line 33 and examples). For example, see example 4, which discloses a polymer that is deduced to have an e of about 0.4, an f of about 0.4 and a g of about 0.2. Also see, example 2-3, which discloses an example wherein e is about 0.3. As to the residue (*), it is noted that the polymers are polymerized via radical polymerization, thus they have residues from the polymerization process at the ends. See examples. Fryd is open to several initiators, which may be hydrophilic. See examples.

25. As to claim 42, as mentioned above, Fryd discloses the that the polymer may comprise methyl methacrylate and amino ethyl methacrylate (hydroxy ethyl methacrylate and specifies that hydroxy and amino are interchangeable function groups). see col. 5, line 38 through col. 6, line 33 and examples. It is also noted that X is not required (e=0).

26. Claims 27 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,262,152 (herein "Fryd") in view of Jankova et al. Macromolecules, 1998, 31, 538-541 (herein "Jankova").

The discussion with respect to Fryd as set forth in paragraphs 21-24 above is incorporated here by reference.

27. As to claim 27, Fryd is silent to the specific pegylated initiator of formula II, However Fryd is open to various initiators and reaction conditions. See examples.

Jankova discloses the use of hydrophilic initiators such as PEG-Br (see examples and paragraphs under introduction on page 538). Jankova also discloses that the initiator is useful in preparing amphiphilic block copolymers. See page 538, first paragraph.

It would have been obvious to one with ordinary skill in the art at the time the invention was made to utilize the initiator of Jankova in the polymer of Fryd because one would want to utilize initiators known to provide useful block copolymers with pegylated groups. See page 538, first paragraph.

28. As to claims 35 and 37-38, the polymer may be a block copolymer with hydrophilic and hydrophobic blocks. See col. 3, lines 35-59 and examples.

29. As to claim 36, Fryd discloses examples (see examples 1-4), which fit the formula wherein $f + g$ is 0.2 to 1.0 and $g:f$ is from 1:2 to 1:10.

Double Patenting

30. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

31. Claims 1-32 and 35-42 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 and 24 of U.S. Patent No. 7,199,185.

Note: U.S. Patent No. 7,199,185 was also used as prior art in the 35 U.S.C. 102(e) rejections set forth above.

32. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 23 discloses a microcapsule (the emulsion comprises suspended particles, see copending parent claim 18) in a suspension. The microcapsule is made of a block copolymer (see copending parent claim 1), the monomers may be MMA, AEMA and DMMAEA (see copending parent claim 1) and have the same formula (see copending parent claim 1), wherein the ranges of e, f, and g is 0.5-0.33, 0.05-0.4 and 0.1-0.9 respectively (see copending parent claim 1). The solid is an agrochemical (see copending claim 23). The crosslinking agent is may be tolylene diisocyanate (see copending claim 5).

Copending claim 23 is silent on the ratio of polymer to solid, however the examples in the specification are well within the claimed range (see paragraph 13 above). Case law holds that those portions of the specification which provide support

for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK S. KAUCHER whose telephone number is (571) 270-7340. The examiner can normally be reached on Monday to Thursday, 8:00 AM to 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/MARK S KAUCHER/
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796